

2. Add the corrected sequence listing, which is provided in written and computer readable format.

#### CLEAN FORM

The clean version of pages 52 and 63 are included.

Corrected Sequence listing in written form is provided (235 pages).

Computer readable form copy of the corrected sequence listing is provided on the enclosed computer disk.

#### MARKED-UP VERSION

The mark-up version page 52 is included.

Copy of the markup sequence listing as per USPTO letter dated 6/8/01 is provided for reference.

#### REMARKS:

The section "Deposits" has been deleted from page 52 to comply with the requirement that the Abstract is on a separate page. The section "Deposits" is added on page 63.

Regarding the sequence listing, fields <140> and < 141> are filled out.


Regarding sequence listing 1, field <221> is filled out.

The sequence listing has been checked with Checker version 3.0 to comply with the requirements of 37 CFR 1.822 and/or 1.823.

This reply encompasses a bona fide attempt to overcome the informal status of the application by which no new matter has been added and a statement is provided on the

following page that the content of the sequence listing recorded in computer readable form on the incorporated computer disk is identical to the incorporated written sequence listing.

Respectfully submitted,

  
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A light-driven energy generation system using proteorhodopsin is provided. Proteorhodopsin sequences were retrieved and amplified from naturally occurring members of the domain Bacteria using proteorhodopsin-specific polymerase chain reaction primers. Proteorhodopsin sequences were placed in expression vectors for production of proteorhodopsin proteins in a host, for instance, *E. coli* and other bacteria. The system also includes a light source and a source of retinal, that allows the system to convert light into biochemical energy. The generated biochemical energy could be mediated into electrical energy by a mediator.

10

[DEPOSITS]

[Depository address: 10801 University Boulevard, Manassas, VA 20110.

15

The *Escherichia coli* containing cloned DNA BAC 31A8 having assigned ATCC number PTA-3083, the *Escherichia coli* containing cloned DNA BAC 40E8 having assigned ATCC number PTA-3082, the *Escherichia coli* containing cloned DNA BAC 41B4 having assigned ATCC number PTA-3080, and the *Escherichia coli* containing cloned DNA BAC 64A5 having assigned ATCC number PTA-3081, all having been deposited on February 21, 2001 with the ATCC Patent Depository.]

20

[The *Escherichia coli* containing a plasmid PAL E6 having assigned ATCC number PTA-3250, the *Escherichia coli* containing a plasmid HOT 0m1 having assigned ATCC number PTA-3251, the *Escherichia coli* containing a plasmid HOT 75m4 having assigned ATCC number PTA-3252, and the *Escherichia coli* containing cloned DNA BAC64A5 having assigned ATCC number PTA 3082, all having been deposited on March 30, 2001 with the

25

ATCC Patent Depository.]